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ABSTRACT

This lesson resource focuses on the interdisciplinary study of dinosaurs and provides insight into the work of paleontologists. The plan includes lesson goals and objectives; background preparation; a glossary of terms; a list of supplies; optional supplies; and instructions and suggestions for lesson implementation. Supplies needed include a commercially available low fire clay and a kiln. Follow-up ideas encourage lesson extension. (MM)

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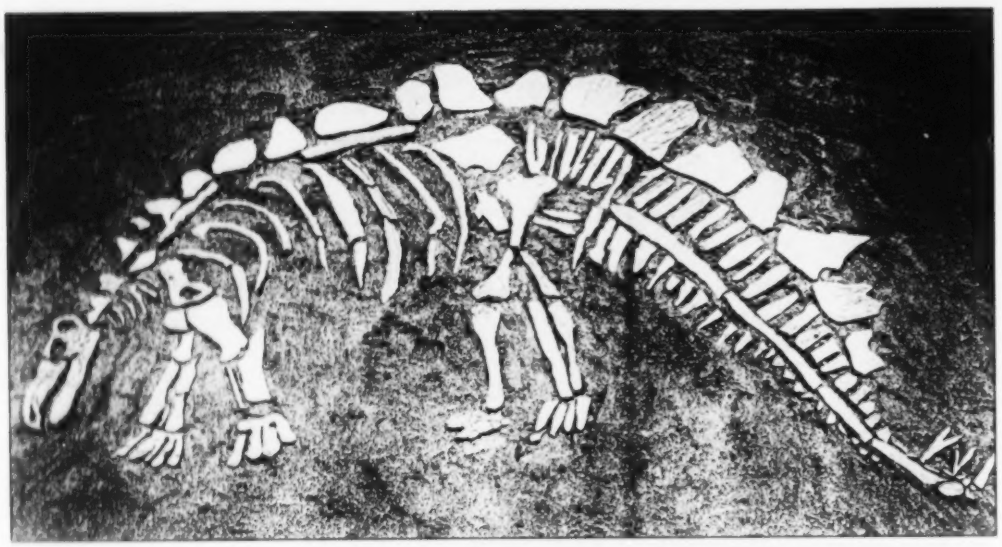

AMACO®

Lesson #5

DIG THIS!

A Relief Sculpture of Dinosaur Bones for Elementary Students

The study of dinosaurs continues to be one of the most engaging activities for elementary students. Because of their fascination with these extinct creatures, most students absorb a remarkable wealth of knowledge about dinosaurs by the time they leave elementary school. Many classroom teachers have often wondered why students are able, with apparent ease, to identify almost every dinosaur that ever lived and recall incredible amounts of information about these creatures, but struggle to remember the current week's list of spelling words. Why not capitalize on this extraordinary interest and create an exciting and very unusual art experience that allows the students to be the experts? In this lesson, students will create a large relief sculpture from low fire clay. They will develop an understanding and appreciation for an important art form, expand their knowledge of dinosaurs and the time in which they lived, participate in an exciting, engaging inter-disciplinary hands-on experience, and provide their school with a lasting educational tool. "Dig This!" is a lesson which will make a lasting impression, just as its subject matter has always done.

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SO 025 612

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Lesson Goals and Objectives:

1. Students will create low-fire ceramic relief sculptures of dinosaur bones.

2. The lesson will incorporate art history, aesthetics, and criticism with a hands-on activity.

3. The lesson, with the cooperation of the classroom teachers, will also focus on the inter-disciplinary study of dinosaurs and provide insite into the work of paleontologists.

Background and Preparation:

1. This project involved the review of dinosaurs by a fifth grade class and the creation of a 6 foot by 9 foot relief sculpture of the bones of a Stegosaurus. The work was coordinated with the second grade teachers in order to correlate with a comprehensive dinosaur unit they teach. When the sculpture was completed, it was laid out and buried in a sand pit in the school's outdoor laboratory classroom. During the second grade's study of dinosaurs, they went on a "dig" and discovered and dug up the bones. With the help of the fifth grade students, the bones were laid out in the correct positions, recreating the relief sculpture of the Stegosaurus.

2. The art teacher in association with the classroom teacher should present an overview of dinosaurs and the age in which these enormous creatures lived. Dinosaurs were the most successful animals to walk on this planet, dominating the earth for approximately 120 million years. Discuss the work of archeologists and paleontologists and what makes them different. Introduce students to the different dinosaur periods – cretaceous, jurassic, and triassic. Show drawings and photographs of different dinosaurs. Ask students to share the resources and information they have with the class. Discuss with students how the dinosaurs became extinct, how they fell, and how their bones have been preserved to be found millions of years later.

3. Present an historical overview of various types of sculpture. Explain to students the different materials used: stone, bronze, wood, clay, etc. Provide students with a simple explanation of how the great masters created the world's most famous sculptures. Show students examples of classical Greek and Roman sculptures and sculptures by Michelangelo, Bernini, Rodin, Degas, and Segal.

4. Explain that most sculptures are created in the round, or are freestanding and completely finished on all sides. Another category of sculpture is called relief sculpture, sculpture that is meant to be viewed from one side only. Relief sculptures have three-dimensional depth, but they do not occupy space independently. Most often they decorate walls or other architectural forms. There are two types of relief sculpture, low relief (sometimes called by the French name bas-relief) and high relief (haut-relief, in French). A low relief projects very slightly from the surface, like the images on a coin. A high relief sculpture projects more boldly from the background. Examples of famous relief sculptures are the walls of Egyptian tombs and Lorenzo Ghiberti's famous bronze doors for the Baptistry of the Florence Cathedral.

5. Explain the differences between two- and three-dimension in art. Explain that a painting is two-dimensional and that a sculpture is three-dimensional because it has depth, because it is meant to be viewed from more than one side.

Glossary:

Archeology - the scientific study of extinct peoples through skeletal remains, fossils, and objects of human workmanship.

Bisque - clay that has been fired once at a low temperature; unglazed, fired pieces of clay. Also is used as a verb.

Ceramics - the art of making objects of clay which are hardened by firing at a high temperature in a kiln.

Dig - an archeological or paleontological excavation.

Fire - a term used in ceramics, to heat the clay in a kiln at a very high temperature until it is dry and hard and becomes pottery.

Kiln - an oven or furnace that reaches very high temperatures (2000° to 2300°) and is used for drying, firing, and glazing ceramic ware.

Paleontology - a science that deals with past geological periods and is based on the study of fossil remains of plants and animals.

Paleontologist - a scientist who has specialized in paleontology.

Relief - Carving, molding, modeling, or stamping in which the design projects from the background surface. The degree that the relief projects from the surface can vary. A bas-relief (low relief) does not project very far, like the surface of a coin. An haut-relief (high relief) projects more boldly from the surface, giving the relief a much more sculptural or three-dimensional appearance.

Sculptor - a type of artist who creates sculptures.

Sculpture - a work of art that is meant to be viewed from more than one side; a work of art that is three-dimensional. It can be carved in stone or wood, or modeled from clay or plaster, or cast in metal.

Template - a pattern or guide.

Texture - the characteristics of the surface of something that we can see or feel.

Three-dimensional - A work of art that is meant to be viewed from more than one side; having the dimension of depth as well as width and height.

Two-dimensional - A work of art that is flat and viewed from the front, like a painting; having the dimension of width and height only.

Supplies:

Assorted resource materials on dinosaurs including skeletal drawings or photographs
Butcher paper
Pencils
Newspaper (to protect tables and desks)
Fabric on which to work (old sheets)
Assorted AMACO® ceramic tools
AMACO® Terra Cotta Clay #77M with grog, Cone 06-5 (Catalog #45143N)

Optional Supplies:

Rolling pins

Instructions:

1. If a relief sculpture of only one dinosaur is to be made, decide which one will work best for the group. In this case, Stegosaurus was chosen because classroom teachers and fifth grade artists all agreed that the large bony plates along its back makes it one of the most easily recognizable dinosaurs and would therefore be readily identified by the second grade "paleontologists."

2. Using a good line drawing of the skeleton of the dinosaur as a guide, students should work together to draw an enlarged skeleton on butcher paper. The Stegosaurus was drawn on a 6 foot by 9 foot paper.

3. This enlarged drawing should be traced or copied exactly so that two drawings are available. The first drawing will be cut up to use as templates; the second drawing will be the pattern guide on which the students will be able to lay out the fired bones.

4. Each bone of both drawings should be categorized by group (ribs, neck bones, upper tail, lower tail, plates, front legs, back legs, head, etc.) and numbered, i.e. #1 Rib, #2 Rib,...; #1 Plate, #2 Plate,.....; #1 Front Leg, #2 Front Leg, ...; and so on.

5. Cut out bones of one drawing to use as templates.

6. Using AMACO® #77M Terra Cotta clay with grog, students should pound or roll out necessary amounts of clay on the fabric to a thickness of approximately 3/4" to 1".

7. Lay a template on clay and, using a needle tool, cut around the template. Peel off template.

8. Using fingers, pencils, and assorted tools, create texture, ridges, grooves, and notches in the bones for a realistic effect.

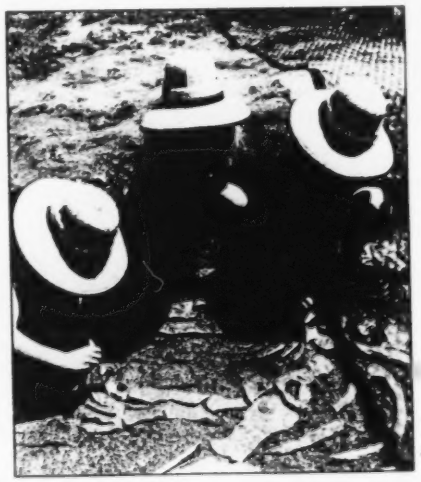
9. Incise with pencil or needle tool the number and group name of the bone on the back.

10. Lay paper template gently back on clay bone and place bone on racks or in cabinet to dry.

11. Continue process (instructions 6-10) for each bone in dinosaur skeleton.

12. After all bones are completely dry, peel templates off (and save), and bisque fire bones once to cone 05.

13. When bones are fired, match templates to bones and lay bones out in their appropriate positions on first drawing.



Additional Suggestions:

1. AMACO® Terra Cotta Clay #77M has a firing range of Cone 06-5. The higher this clay body is fired the darker the clay will become. For a more chocolate color, fire to Cone 5.

2. If you wish the bones to be white, use AMACO® White Sculpture Clay No. 27M with grog.

3. If you want students to create free-standing sculptures, this lesson can be adapted to allow students to sculpt models of dinosaur skulls and other assorted dinosaur bones.

4. If making such a large relief sculpture would present problems, divide students into small groups to make smaller models (3 feet by 3 feet). The results would be an assortment of smaller relief sculptures instead of one very large sculpture.

5. If an outdoor sand pit is not available at your school, a box can be built for the classroom and filled with sand to provide a similar "dig" experience for the younger students.

Follow up ideas:

1. Either before, during, or after this lesson, arrange a trip to the local museum that features dinosaurs.

2. After the "dig" is completed, arranged with the school's administration to hang the dinosaur relief sculpture(s) permanently on a wall in the school.

3. Save the bones and the lay out drawing to use for "digs" with upcoming classes.

4. Working with the classroom teachers, have students do research on a particular dinosaur, the work of archeologists or paleontologists, or the ages of dinosaurs. Students can prepare and present reports on their research complete with drawings, charts, and maps.

Examples of ceramic sculptures are by art students from Van Buren Elementary School, Plainfield, Indiana, Susan Robbins, art teacher.

This is one lesson in a series of art plans for elementary and secondary programs using American Art Clay Co., Inc. products. Successful lessons will be considered for future publication. Send your ideas and slides to David Gamble, National Marketing Director, American Art Clay Co., Inc.

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